



RESIDENTS' KNOWLEDGE AND ATTITUDES TOWARD THE USE OF ANALGESICS FOR PAIN MANAGEMENT: A SURVEY IN A TERTIARY LEVEL UNIVERSITY HOSPITAL IN NEPAL

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ABSTRACT

Background: Pain is still being ignored which has lead to mismanagement in pain treatment in the developing countries. One of the barriers in adequate pain management is lack of adequate knowledge among health personnel including residents who are one of the important personnel that can make difference in pain management as they prescribe analgesics particularly opioids to the patients.

Objectives: The objective of the study was to find out the attitude and knowledge toward the use of analgesics for pain management in residents.

Methods: 90 residents distributed in different departments of Tribhuvan University Teaching Hospital who prescribe analgesics mainly opioids in the postoperative ward were involved in this study. The data was collected through distribution of self administered questionnaire. Data was entered in Excel and analyzed in SPSS version 21.

Results: The present study revealed that residents obtained less knowledge and attitude score about pain management, the mean score being 3.6 (3±1.55) out of 9 for knowledge and 25.79 (±4.27) out of 40 for attitude. In our study, attitude and knowledge score of anesthesiology residents were higher than other residents, which was statistically significant. With higher year of residency and past training in pain there was an increment in knowledge but not in attitude.

Conclusion: It can be concluded that there is inadequate knowledge and attitude of residents regarding the use of analgesic including opioid for pain management, which shows there is a need for inclusion of pain management in medical education and organization of regular training program for residents.

KEYWORDS: Analgesic, Attitude, Knowledge, Pain, Residents.

INTRODUCTION:

Pain is the most common reason why people visit a healthcare professional. (Goldberg, 2011). Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (IASP, 2010). As reported by Brennan et al., (Brennan, 2007) inadequate pain management is the source of major economic and human costs for patients, their families and society. Despite the physiological, psychological and economic impact of inadequate pain management and its ramifications for patients, their families and society, evidence indicates there is still a gap in the understanding of the pain pathophysiology, by healthcare professionals, which is likely to have contributed to the widespread inadequacy of pain treatment. Barriers to adequate pain control have imposed by physicians, nurses, healthcare services, patients and their caregivers, of which physician related issues were the most important. (Larue, 1995). Problems that physicians face in their approach to pain control in patients include: Lack of knowledge, inadequate evaluation of pain, concerns regarding patients' addiction to medications, patient's tolerance and adverse effects of medications which have been used in pain control. (Yun, 2005)(Furstenberg, 1998). Culture, training period, and previous experience of pain could also probably affect the physicians' attitude. (Burnett, 2009). Pain is still being ignored in the developing countries which has lead to mismanagement in pain treatment. There are a few studies conducted in developing countries in the field of pain management. So the aim of the study was to assess the knowledge and attitude of residents involved in pain management toward the use of analgesic in a tertiary care university hospital.

METHODS:

A hospital based descriptive cross sectional study design was applied to assess the knowledge and attitude of residents toward the use of analgesics for pain management. The study was carried out at Tribhuvan University Teaching Hospital (TUTH), Maharajgunj over duration of one month. This hospital was chosen, as it is one of the tertiary and large hospitals of Nepal with relatively maximum residents enrollment. Thus, adequate sample could be collected from the residents.

Census Method was used to select the respondents. Thus all the 90 residents were selected as samples. Residents working in different departments who prescribe analgesics mainly opioids for pain management were selected, the distribution of which are Department of Anaesthesiology, Department of General Surgery, Department of Orthopaedics, Department of gynaecology and obstetrics. Among 98 residents eight were non-responders.

The data specific to the study was collected through distribution of self administered questionnaire developed by Ger LP et al. (Ger, 2000). Their questionnaire

was designed to assess the physicians on the following aspects: 1) attitude toward the optimal use of analgesics for cancer pain management (6 questions); 2) knowledge and attitudes toward opioid prescribing (16 questions); and 3) perception of barriers to cancer pain management (14 questions). Content validity of these scales was determined by an expert panel, which consisted of three experienced anesthesiologists and an oncology nurse. The coefficient alpha was 0.81 for the knowledge scale and 0.80 for the attitude scale.

Since we used the questionnaire in postoperative pain management we omitted a few cancer pain related questions. Our tool's test-retest reliability was $r = 0.80$ and the internal consistency reliability was $\alpha = 0.70$. The tool was pre tested in the medical residents of TUTH.

The data collection tool comprised of pre-designed structured questionnaire as per the objectives of the study. The questionnaire consisted of general information of the respondents, four single response questions to assess attitudes toward the optimal use of analgesics for pain management, nine true/false questions to assess knowledge of opioid prescribing. Scoring was given according to the number of correct answers. There were seven negative questions and one positive question for the scale of attitude to prescribe opioids. A 5-point Likert scale format was utilized, ranging from strongly agree to strongly disagree, with a score of 1 to 5 for negative questions and with a score of 5 to 1 for positive questions.

The residents were given the questionnaires in person after taking the informed written consent form from them during their posting in the operation theatre.

Ethical approval was taken from Institutional Review Committee of Institute of Medicine (IOM), Tribhuvan University. Written informed consent was taken from the respondents before data collection, after doing clear explanation of the purpose and plan of the study.

The collected data were entered in Microsoft excel and then exported to Statistical Package for Social Sciences (SPSS) version 21. Mean, standard deviation, frequency and percentage were used in descriptive analysis whereas Kruskal Wallis H test was used to assess relationship between knowledge and attitude and selected variables like different department, year of residency, past training or workshop attended, work experience. p value was considered at 0.05.

RESULTS:

The personal and practice characteristics of the 90 residents who responded to the questionnaire are presented in Table 1.

Table 1: Characteristics of Residents

n=90

Characteristics	Number	Percentage
Sex		
Male	65	72.2
Female	25	27.8
Age in years		
20-24	1	1.1
25-29	46	51.1
30 and above	43	47.8
Mean age=29.09±2.165 years		
Departments distribution		
Anaesthesiology	19	21.1
General Surgery	25	27.8
Orthopaedics	24	26.7
Obstetrics & Gynaecology	22	24.4
Past work area		
Emergency	23	26.1%
Surgery	15	17.0%
Medicine	48	54.5%
ICU/CCU	7	8.0%
Anaesthesiology	2	2.3%
Paediatrics	3	3.4%
OPD	3	3.4%
Obstetrics & Gynaecology	2	2.3%

Table 2: Work experience and Training on Pain Management

Past work experience (in months)	Number	Percentage
Less than 6	5	5.6
6-12	32	35.6
13-24	28	31.1
24-48	22	24.4
More than 48	3	3.3
Past Training/Workshop attended		
No	68	75.6
Yes	22	24.4

Most of the residents (35.6%) had work experience of 6-12 months as medical officers and 75.6% of them did not have any past training in pain management (Table 2).

The responses of residents to the attitude toward the optimal use of analgesics for pain management questions are shown in Table 3. Although the majority of residents (62.2%) felt that most patients receive adequate pain treatment in their hospital, most of the residents displayed a negative attitude toward analgesic medication by only 13.3% of them aimed for complete pain relief for the patients while the most of residents (76.7%) sought just to diminish the patients' pain. The majority of residents (90%) believed that only 60 - 80% pain could be relieved with pharmacological pain relievers. When a patient requested increasing amounts of analgesics to control pain, most of residents (45.6%) believed the patient was either experiencing an increase in pain or developed tolerance to drug or was psychologically addicted.

Table 3: Residents' Attitudes Toward the Optimal Use of Analgesics for Pain Management

Attitudes	Number	Percentage
Which of the following is true at your hospital?		
Most patients receive adequate pain treatment	56	62.2
Most patients receive more pain medication than necessary	7	7.8
Most patients in pain are undermedicated	27	30.0
Which of the following is the most appropriate pain relief during the period of treatment at your hospital?		
Pain is completely abated	12	13.3
Pain is diminished, noticed but not distressing	69	76.7
Pain is diminished only during the maximal effect of analgesics	9	10.0
What percentage of pain can be relieved with pharmacological pain relievers?		
20%	0	0
40%	1	1.1
60%	27	30.0
80%	54	60.0
100%	8	8.9
When a patient requests increasing amounts of analgesic to control pain, this usually indicates		
Patient is psychologically addicted	4	4.4
Patient is experiencing increased pain	33	36.7
Patient has developed tolerance to drug	12	13.3
All of the above	41	45.6

Table 4: Residents' Knowledge of Opioid Prescribing

Questions	Correctly answered	
	n	%
When patients need potent opioids, pethidine is prescribed rather than morphine.	26	28.9
Pethidine causes less harmful effects (such as tolerance, addiction, or side effect) in long-term opioid use.	20	22.2
For patients with moderate or severe pain, Pethidine 50 mg q 4 h, PRN, IM should be prescribed.	15	16.7
For patients with persistent and severe pain, potent opioid dosage should be increased and administered it q 4 h, PRN.	66	73.3
Administering opioids in a PRN dosing schedule can decrease the harmful effect of opioids, such as tolerance, addiction, or side effect.	21	23.3
Parenteral administration is more efficacious than oral administration in pain management.	23	25.6
When the patient's renal function is impaired, Pethidine should not be prescribed for pain treatment.	73	81.1
Oral administration of morphine is more inclined to induce side effects of nausea & vomiting than parenteral administration.	28	31.1
Oral morphine absorbed from the gut is subject to first-pass metabolism in the liver and this would make 1/3 morphine ineffective.	55	61.1

Regarding residents' knowledge of opioid prescribing, the mean knowledge score was 3.63±1.55 out of 9. The responses of residents to knowledge questions are shown in Table 4. The majority of residents displayed substantial knowledge deficits of opioid prescribing. For example, when patients needed potent opioids, more than half of the residents (71.1%) preferred Pethidine rather than morphine. Furthermore, 83.3% of the residents had the misconception about the route of

administration of opioid as they thought for patients with moderate or severe pain, Pethidine 50 mg q 4 h, PRN, IM should be prescribed.

The responses of residents' attitudes toward opioid prescribing are shown in table 5. The mean score was 25.79±4.27 out of 40 for this scale.

Table 5: Residents' Attitudes Toward Opioid Prescribing

Items	Strongly agree	Agree	No Opinion	Disagree	Strongly degree
1. When prescribing opioids, I would be very careful in the control of dosage and frequency for the prevention of drug tolerance and addiction.	32	51	1	6	0
2. The opioid dosage patients receive should be much lower than the required dosage for the prevention of drug tolerance.	6	30	13	33	8
3. When I prescribe opioids, I would insinuate to patients or their relatives that opioids are not good drugs and they had better bear the pain as much as possible.	2	16	7	49	16
4. When I find patients who bear severe pain and refuse the morphine injection, I would encourage their behavior.	6	12	14	44	14
5. I do not like to prescribe opioids, because respiratory depression is a very severe side effect.	4	26	4	48	8
6. For patients with severe nausea or vomiting, I would prescribe opioids infrequently or with lower dosage.	5	41	12	31	1
7. For patients with severe abdomen distention, I would prescribe opioids infrequently or with lower dosage.	7	44	19	15	5
8. For patients with severe constipation, I would prescribe opioids infrequently or with lower dosage.	9	52	6	19	4

Table 6: Comparison of Knowledge and Attitude among Different Departments

Knowledge and attitude score	Department				p value
	Anaesthesiology	Surgery	Orthopaedics	Obg/Gynae	
Mean Knowledge score	4.57±1.77	3.52±1.61	3.29±1.20	3.32±1.39	0.044*
Mean Attitude score	28.63±2.97	25.24±5.04	24.92±3.32	24.91±4.36	0.003*

*p value significant at 0.05

When comparing mean knowledge and attitude score among residents of different departments (table 6), anaesthesiology residents had better score than residents of other departments ($p < 0.05$).

Table 7: Comparison of Knowledge and Attitude with Year of Residency

Knowledge and attitude score	Year of Residency			
	First year	Second year	Third year	p value
Mean Knowledge score	3.31±1.31	3.12±1.39	4.57±1.60	0.001*
Mean Attitude score	23.96±4.71	27.21±3.70	26.00±3.83	0.028*

*p value significant at 0.05

When comparing mean knowledge and attitude score with year of residency (table 7), third year residents had significantly better knowledge score and second year residents had better attitude score compared to other groups ($p < 0.05$).

When comparing knowledge and attitude score with past training or workshop in pain management among residents (table 8), mean knowledge score was significantly better among the trained groups ($p < 0.05$). However the mean attitude score was not significantly different.

Table 8: Comparison of Knowledge and Attitude with Past Training/Workshop

Knowledge and attitude score	Past training/workshop		
	Yes	No	p value
Mean Knowledge score	4.45±1.74	3.37±1.40	0.011*
Mean Attitude score	26.86±4.10	25.44±4.29	0.136

*p value significant at 0.05

DISCUSSION:

This study has provided valuable information on knowledge and attitude about analgesic use in pain management of various residents training in a tertiary level university hospital of Nepal. The present study revealed that residents obtained less knowledge and attitude score about analgesic use including opioid in pain management, the mean score being 3.6 (3±1.55) out of 9 for knowledge and 25.79 (±4.27) out of 40 for attitude. Previous studies have reported different degrees of inadequacy in knowledge and attitude of residents towards pain evaluation and management. (Yun, 2005)(Clarke, 1996)(Weinstein, 2000)(Branch, 1999). In our study, attitude and knowledge score of anaesthesiology residents were higher than other residents with a statistically significant difference similar to the study conducted by Hashemi M et al (Hashemi, 2015) in which they found attitude and knowledge of anaesthesiology residents were higher than other groups, but have not shown a statistically significant difference.

In our study third year residents had better knowledge score than first and second year residents (p value 0.001) but regarding attitude score it was high in second year residents than in first and third year residents (p value 0.028). This shows that with the advancement of training period there is improvement in knowledge but not in attitude. This could have been due to failure of application of knowledge, which they have gained.

The majority of residents (62.2%) felt that most patients receive adequate pain treatment in their hospital in our study while majority of physicians (66%) recognized the problem of inadequate pain management in two hospitals surveyed in Taiwan. (Ger, 2000) However most of the residents displayed a negative attitude toward analgesic medication as only 13.3% of them aimed for complete pain relief for the patients while the most of residents (76.7%) sought just to diminish the patients' pain in contrast to physicians in other studies. (Fife, 1993)(Ferrell, 1995)(Ventrifrida, 1987)(White, 1991). A large majority of residents (90%) in this study underestimate the pain relief effect of analgesics in contrast with the physicians (30–35%) in other studies. (Ferrell, 1995)(Ventrifrida, 1987)

In this study 92.3% of the residents indicated that they would be very careful in the control of opioid dosage and frequency because of the undue fear of tolerance and addiction similar to the findings where 73% physicians have the same opinion in the study done by Ger LP et al. (Ger, 2000). This shows that the legitimate medical use of analgesic drugs (opioids) is overshadowed by undue fear of addiction, consciously or subconsciously among health workers.

Many resident physicians in this study showed significantly inadequate knowledge of fundamental facts of opioid pharmacology, such as the choice of potent opioids (morphine or meperidine), (Elliott, 1992)schedules (around-the-clock or PRN), (Elliott, 1992)(Mercadante, 1996) and routes of administration (by oral or parenteral) (Table 4) in comparison with physicians in the Western countries. (Elliott, 1992)(Mercadante, 1996)(Furstenberg, 1998). This could have resulted from inadequate detailed pain management training programs both in the basic medical education and in residency training programs.

In our study when knowledge and attitude score was compared with past training or workshop in pain management among residents (table 8), mean knowledge score was better and was statistically significant (p value 0.011) than mean attitude score (p value 0.136). Though we could not know the exact duration or level of pain management training they received, it certainly helped residents to gain knowledge but did not help improve attitude. The reason for this might be their attitude being influenced by their consultants' attitude, as residents are the ones to carry out the order given by their respective consultant physicians.

CONCLUSION:

The current study shows that there is inadequate knowledge and attitude of residents regarding the proper use of analgesic, which is one of the basics of pain management. As the residents are the most important parts in the multidisciplinary approach in pain management, their knowledge and attitude

make a huge difference. So it is recommended that medical schools should provide educational programs on pain management and integrate education with clinical training.

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